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Title : DEVELOPMENTAL CHANGES IN THE FORAGING BEHAVIOR OF JUVENILE NORTHERN ELEPHANT SEALS.

Category : Behavior

Student : M.A./M.S.

Preferred Format : Either Oral or Poster Presentation

Abstract : Low juvenile survivorship is attributed to foraging difficulties in many species. The diving capability of female northern elephant seals, Mirounga angustirostris, allows them access to vertically migrating prey in the deep scattering layer. Despite potential developmental constraints, juvenile seals forage at similar depths to adult females. We used swim-speed and time-depth recorders to examine the foraging behavior of 1.4 -2.4 year old females for insight into physiological limits on foraging time. Instruments were deployed on sixteen 1.4 year old females in Spring 2002, recovered and re-deployed on thirteen 1.8 year old females in Fall 2002. Maximum dive duration significantly declined with increased swimming speed, suggesting an impact of swimming speeds on utilization of oxygen reserves. There were significant increases in descent speeds, reductions in ascent speeds and increases in descent and ascent angles with increasing depth. Speeds in the foraging zone were significantly slower than ascent and descent speeds for most animals. Unlike adult animals, there was no significant difference between descent and ascent speeds in foraging or transit dives, suggesting reduced impacts of buoyancy on diving behavior. Speeds used by animals were similar or below estimated MCT speeds. No significant difference in proportion of dives spent in the foraging zone existed between age classes. However, there was a significant increase in mean dive duration, depth, age, and percent time diving. Thus, older animals spent more time in the foraging zone. There was a trend towards increasing proportions of foraging dives with age ($p = 0.06$) despite no significant difference in percent mass gained between age classes. Some 1.4 year olds followed marked diel patterns while all 1.8 year olds exhibited this behavior, indicating increased utilization of vertically migrating prey. These findings suggest remarkably consistent foraging success between age groups despite developmental changes in diving behavior.